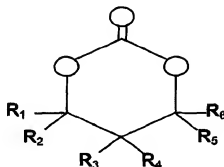


Attorney Docket 124172-1026 (D#81,565-D1)

PATENT



where R_1 , R_2 , R_3 , R_4 , R_5 , and R_6 are each independently hydrogen or a linear or branched alkyl group having one to six carbon atoms.

- A2
5. (Amended) The method of claim 1, wherein R_1 , R_2 , R_3 , R_4 , R_5 , and R_6 are each independently hydrogen or an alkyl having one to two carbon atoms.

Remarks

Rejections under 35 U.S.C. § 112

The Examiner rejected claims 1-6 under 35 U.S.C. § 112, first paragraph as containing subject matter not described in the specification in such a way to enable one with skill in the art to make and/or use the invention. Specifically, the Examiner asserted that a "method of preparing hydroxyalkylcarbamate compositions" is broader than the enabling disclosure.

The propriety of a rejection based on the scope of a claim being broader than the enabling disclosure involves a two-stage inquiry: first, the entire claim must be

considered in determining how broad a claim is with respect to the disclosure; and second, whether one with skill in the art is enabled to make and use the entire scope of the claimed invention without undue experimentation. See *MPEP* § 2164.08. "When analyzing the enabled scope of a claim, the teachings of the specification must not be ignored because claims are to be given their broadest reasonable interpretation that is consistent with the specification." *Id.* Factors to be considered to determine if any necessary experimentation is undue include:

- (A) The breadth of the claims;
- (B) The nature of the invention;
- (C) The state of the prior art;
- (D) The level of one of ordinary skill;
- (E) The level of predictability in the art;
- (F) The amount of direction provided by the inventor;
- (G) The existence of working examples; and
- (H) The quantity of experimentation needed to make or use the invention based on the content of the disclosure.

In re Wands, 858 F.2d 731, 737, 8 USPQ2d 1400, 1404 (Fed. Cir. 1988). As long as the specification discloses at least one method for making and using the claimed invention that bears a reasonable correlation to the entire scope of the claim, then the enablement requirement of 35 U.S.C. § 112 is satisfied. See *MPEP* § 2164.01(b); see also *In re Fisher*, 427 F.2d 833, 839, 166 USPQ 18, 24 (CCPA 1970).

As the first step in the two-stage inquiry, considering the entire claim, we compare it with the disclosure. Applicants' independent claim 1, and therefore dependent claims 2-6, recite a method of preparing a hydroxyalkylcarbamate composition from a six-membered cyclic carbonate. Applicants' specification sufficiently describes a method of preparing a hydroxyalkylcarbamate composition from six-membered cyclic carbonates. See e.g. page 5, paragraph 0009; page 6, paragraph 0010; and page 8, paragraph 0011, and Examples 1-3, pages 10-12. Based on applicants' direction and working examples, one of ordinary skill in the art can practice the claimed invention without undue experimentation. In addition, applicants provide working examples that are reasonably correlated to the entire scope of the claims, thus satisfying the enablement requirement. See Example 3, page 11 (describing a hydroxyalkylcarbamate composition prepared from a six-membered cyclic carbonate). Applicants respectfully submit that independent claim 1, and therefore dependent claims 2-6, satisfy the requirements of 35 U.S.C. § 112, first paragraph. Applicants respectfully request that the rejection of claim 1 and dependent claims 2-6 under 35 U.S.C. § 112, first paragraph, be withdrawn.

The Examiner also rejected claims 1-6 under 35 U.S.C. § 112, second paragraph as being vague and indefinite, stating that it was unclear if the claims encompass all hydroxyalkylcarbamate formulae, or if the claim is limited to the specific structural formulae of the specification. In addition, the Examiner stated that the expression "with from about" in claims 1 and 5 was idiomatic.

35 U.S.C. § 112, second paragraph contains two separate requirements: (1) the claims must set forth the subject matter that applicants regard as their invention; and (2) the claims must particularly point out and define the metes and bounds of the subject matter that will be protected by the patent grant. *MPEP* § 2171. The first requirement is subjective, because it is dependent on what the applicants regard as their invention. Absent evidence to the contrary, the claims must be presumed to be that which the applicants regard as their invention. *MPEP* § 2172. The second requirement is objective, and is dependent on whether the scope of the entire claim as a whole is clear to a hypothetical person possessing an ordinary level of skill in the art. *MPEP* §2173.02.

Applicants submit that claims 1-6 satisfy these two requirements. Independent claim 1 recites a method of preparing a hydroxyalkylcarbamate composition from a six-membered cyclic carbonate. A person with an ordinary level of skill in the art would know the metes and bounds of applicants' invention, based on the reaction of a six-membered cyclic carbonate structure with aqueous ammonium hydroxide, as is recited in independent claim 1.

Applicants have amended the expression "with from about" in claims 1 and 5 to conform to the requirements of 35 U.S.C. § 112, second paragraph. Accordingly, applicants respectfully request that the rejection of claim 1 and dependent claims 2-6 under 35 U.S.C. § 112, second paragraph, be withdrawn.

Rejections under 35 U.S.C. § 103(a)

The Examiner rejected claims 1-6 under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 4,520,167 to Blank et al. ("Blank"). The Examiner asserted, "the claimed compositions would be obvious from the homologous compounds of the reference in the absence of any unobvious or unexpected properties especially since one of ordinary skill in the art would expect that compounds so closely related structurally would have the same or virtually the same properties." Applicants respectfully traverse the § 103(a) rejection as being improper.

MPEP § 2142 states that the "examiner bears the initial burden of factually supporting any *prima facie* conclusion of obviousness." That section further states that

to establish a *prima facie* case of obviousness, three basic criteria must be met. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. Second, there must be a reasonable expectation of success. Finally, the prior art reference (or references when combined) must teach or suggest all the claims limitations. The teaching or suggestion to make the claimed combination and the reasonable expectation of success must be found in the prior art, and not based on applicant's disclosure.

See also, *In re Vaeck*, 947 F.2d 488 (Fed. Cir. 1991). In addition, the presumption of obviousness based on a reference disclosing similar chemical compounds is overcome when there is evidence showing that there is no reasonable expectation of similar properties in structurally similar compounds. See *MPEP* § 2144.09. Applicants respectfully submit that the Examiner has not met the criteria for establishing a *prima facie* case of obviousness.

Blank does not expressly disclose or suggest preparing hydroxylalkylcarbamate compositions by reacting aqueous ammonium hydroxide and a six-membered cyclic carbonate as recited in independent claim 1 of this application. See *Blank* column 3, line 46 to column 4, line 6.

One of skill in the art would have no motivation to modify Blank to produce applicants' claimed hydroxylalkylcarbamate composition, because there is no explicit or implicit teaching or suggestion to do so in the reference itself. *MPEP* § 2143.01. The mere fact that a reference **can** be combined or modified does not render the resultant combination or modification obvious, unless the prior art also suggests the desirability of the combination or modification. See *In re Mills*, 916 F.2d 680, 16 USPQ2d 1430 (Fed. Cir. 1990). Blank does not teach or suggest preparing hydroxylalkylcarbamate compositions by reacting aqueous ammonium hydroxide with a six-membered cyclic carbonate having hydrogen or linear or branched one to six carbon atom alkyl groups, as is claimed in applicants' application. In comparison, Blank discloses a hydroxylalkylcarbamate composition prepared by reacting a primary amine with a six-member cyclic carbonate. There is no explicit or implicit suggestion in this teaching to motivate one to modify Blank's reactive components to achieve the composition claimed in applicants' application.

In addition, there is no reasonable expectation that modifying Blank would successfully produce applicant's claimed invention. *MPEP* § 2143.02. See *In re Merck & Co., Inc.*, 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986). Whether the proposed modification or combination of the prior art has a reasonable expectation of success is

determined at the time the invention was made. *Ex parte Erlich*, 3 USPQ2d 1011 (Bd. Pat. App. & Inter. 1986).

Blank expressly states reacting "six-member ring organic carbonates" with a primary amine is not preferred because six-member ring organic carbonates are expensive and difficult to prepare. See *Blank*, column 4, lines 11-14. Such "teaching away" from the art is a per se demonstration of lack of prima facie obviousness. See *In re Dow Chemical Co.*, 837 F.2d 469, 5 U.S.P.Q.2d 1529 (Fed. Cir. 1988); *In re Fine*, 837 F.2d 1071, 5 U.S.P.Q.2d 1596 (Fed. Cir. 1988).

Applicants would have no reasonable expectation, at the time of their invention, that reacting the six-member ring organic carbonate with aqueous ammonium hydroxide would produce a hydroxyalkylcarbamate composition that is easier to purify with superior handling characteristics. Also, without endless experimentation, Applicant would have had no reasonable expectation, at the time of invention, that the claimed hydroxyalkylcarbamate composition would be successfully produced based on Blank. A prior art suggestion for virtually endless experimentation is not a case of *prima facie* obviousness. See *In re Dow Chemical Co.*, 837 F.2d 469 5 USPQ2d 1529 (Fed. Cir. 1989).

To establish *prima facie* obviousness of a claim, all the claim limitations must be taught or suggested by the prior art. *MPEP* § 2143.03; See *In re Royka*, 490 F.2d 981, 180 USPQ 580 (CCPA 1974). If an independent claim is nonobvious under 35 U.S.C. § 103(a), then any claim depending therefrom is nonobvious." *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988). Because Blank does not teach or suggest all the

limitations in independent claim 1, all claims dependent on claim 1 of this application are non-obvious as well.

The presumption of obviousness based on Blank's disclosing similar chemical compounds is overcome, because Blank states that use of five-member cyclic carbonates are preferred over six-member cyclic carbonates due to expense and difficulty of preparation. Applicants overcame this "teaching away" from their invention, and have found that six-member cyclic carbonates are easier to purify, do not revert back to their starting materials, and have superior handling characteristics compared to those prepared from five-member cyclic carbonates.

Accordingly, applicants respectfully request that the rejections of claims 1-6 under 35 U.S.C. § 103(a) be withdrawn.

Conclusion

In view of the foregoing remarks, applicants respectfully submit that this application and all pending claims are in condition for allowance.

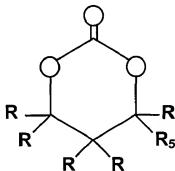
Respectfully submitted,



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VERSION WITH MARKINGS TO SHOW CHANGES MADE

1. (Amended) A method for preparing a hydroxyalkylcarbamate composition[s] comprising the step of reacting aqueous ammonium hydroxide and a cyclic carbonate, wherein the cyclic carbonate has the following general structure:



where R_1 , R_2 , R_3 , R_4 , R_5 , and R_6 are each independently hydrogen or a linear or branched alkyl group [with from] having [about] one to [about] six carbon atoms.

5. (Amended) The method of claim 1, wherein R_1 , R_2 , R_3 , R_4 , R_5 , and R_6 are each independently hydrogen or an alkyl [with from] having [about] one to [about] two carbon atoms.